Home Computing WEEKLY

An Argus Specialist Publication

June 7-13, 1983 No. 14 35p

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NEW ROW OVER TAPE SWOPPING

SOFTWARE companies fear a new tape swop scheme will encourage more copying and — if it grows — hit the sale of new tapes.

It was set up by Les Martin who, until two months ago, worked for the controversial Buy 'n Try shop.

Mr Martin, 48, has started Computerhouse, trading name of Courtland Computer Services, which now has 600 members at £12.95 a year.

Members' used software is listed in a sheet and other members can either offer to exchange with tapes of similar value or buy at 80 per cent of the original price.

Mr Martin stressed that Computerhouse made no money from this and acted purely as a clearing house, checking that tapes were genuine and as new, complete with inlay cards and passing on members' money.

But Richard Turner, managing director of Artic Computing, said: "I wish him the best of luck. I hope they run out of money in a few seconds."

And Dave Lawson, partner in Imagine Software, said the scale of copying was so large that Mr Martin's scheme would have an insignificant effect.

How does Computerhouse make a profit?

Mr Martin explained that his company would take a percentage of the prices of used computers and other equipment offered to members and on sales of new software, which would sell at usual retail prices.

Within three months he planned to set up his own software company, called Fantasia.

He said that his advertisement had been misleading and was being changed. It had given the impression that Computerhouse itself was prepared to buy secondhand software.

Mr Martin said: "It does not say what we are doing. It seems a bit under hand. It does sound as if people could send in software and we will buy it."

He had also changed the

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Use your vote for cheaper micros!

VOTE Peter Dick for cut-price computers, removal of the 70mph speed limit — and cheap cat food for pensioners' pets.

Mr Dick, a 36-year old freelance programmer, has paid the £150 deposit to stand for his own BASIC party in Hammersmith, west London.

Nerve centre of his campaign is a victorian semi in the Goldhawk Road which he shares with his 27 year-old wife Jane.

Although the idea sounds eccentric Mr Dick insists he has a serious message.

Making computers VAT-free would get more people using them and bring more work for the industry.

He said: "I'm trying to emphasise that one of the most important things for the country is the microcomputer — it's the equivalent of the Industrial Revolution.

"Your readers have discovered that computers are the future. They will change our lives to the same degree as the internal combustion engine.

"Margaret Thatcher is allowing money for one computer per school — it needs one per person. What I want the government to do is to reclassify what they regard as a toy to an educational aid so there is no VAT.

"After all, computers are increasing the mental power of the nation in the same way that machines increased muscle power.

"I'm not trying for power and I'm not necessarily likely to win this seat. As far as I'm

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The books assume absolutely no knowledge about computers and the reader is shown even the most fundamental operations such as "switching on" and "loading a program". The books lead the reader through simple programming and then on to graphics, with several programs which show how to achieve pictures and even animation!

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All books in the series are £5.95 (incl postage)

Gower

To be published June 1983

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Robin Bradbeer
LEARNING TO USE THE ZX81
Garry Marshall
LEARNING TO USE THE PET COMPUTER
William Turner
LEARNING TO USE THE APPLE II/IIe COMPUTER
Robin Bradbeer
LEARNING TO USE THE ZX SPECTRUM
Ron Geere
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William Turner
LEARNING TO USE THE COMMODORE 64 COMPUTER
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Classified Advertising
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Argus Specialist Publications Ltd.
145 Charing Cross Road, London WC2H OEE 01-437 1002

Home Computing Weekly is published on Tuesdays. Distribution by Argus Press Sales and Distribution Ltd, 12-14 Paul Street, London EC2A 4JS. Printed by Alabaster Passmore & Sons Ltd, of London and Maidstone, Kent. Design and origination by MM Design and Print, 145 Charing Cross Rd, London WC2H OEE

A Prophecy:-
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will be coming to get you
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Call (0344) 27317 for info

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terms of membership. Now members did not have to buy from the list to take part. At the same time he had increased the annual subscription from £9.95 to £12.95.

He blamed the mistake in part on his anxiety to keep his scheme under wraps in case someone else tried to set up something similar.

He said: "I didn't want to give the scheme away. We need our members and we were trying to be discreet before the software companies started to scream, although I can't imagine why they should. We won't be that big. There are a million micro users out there and we only want 2,000.

"Exchanges are going on all the time. People do exchange among themselves.

"They will still buy the original stuff and that's what I want to do — sell new software."

Could his members copy tapes and then exchange the originals? Mr Martin said: "I suppose they could, but we would not entertain copies. We will only handle original tapes with the original inserts."

Mr Martin said the idea came to him while he spent two months working for Buy 'n Try, run by Bill Cannings. He had joined, after taking three night school courses in computing, expecting to be dealing with business accounting systems.

The boss of one software company said his staff had checked Mr Martin's company and found it was operating from the same address as one of Mr Cannings' firms. He suspected this was to enable Buy 'n Try to get more tapes.

Mr Martin denied this emphatically, saying that the registered office was his accountants, with operating addresses in Walthamstow and Ilford. He believed his firm had been confused with another with similar initials which was run by Mr Cannings.

He said: "There's absolutely no connection. I'm flattered that someone thinks there is — Bill Cannings' business is much bigger than mine."

Mr Martin said he had taken out a second mortgage and got

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Software Supermarket

Continued from column 1

help from his bank to start Courtland Computer Services and that his co-director, Raymond Parr, owned the other 33 per cent.

Artic's Richard Turner said: "I suppose it could encourage copying. People do swop tapes — but you don't do it through a third party. He's going to have to have an enormous mailing list to affect the market."

And Mr Lawson said: "I don't believe there's so much swopping as much as copying. It seems to us that at least two-thirds of tapes are copies and it could be as high as three-quarters. Who needs to swop when you can copy?

"As far as we can see everyone copies across the board and across the professions. We have heard of a police officer, a dentist and a solicitor doing it. It's a crime condoned by society."

He knew of clubs where members spent the whole evening copying each others' tapes.

• • •

Tapes for a myriad micros

Pasesoft would hate any micro owner to feel left out of the software scene. Its latest batch of software releases consists of four tapes for the BBC B, one for the Lynx, one for the Dragon, two for the TI-99/4A (with two and three games on one tape), one for the 16K Spectrum, five for the VIC-20, one for the 16K and even one for the 1K ZX81.

The company already has five Oric programs on the market — and will be releasing more Oric software in a couple of weeks.

Most of the current batch of 16 are action games, though the Lynx tape is a dissassembler. Apart from the two ZX81 programs, priced at £3.95, they all cost £4.99 from Pase and other retail outlets.

Pase only branched out into the software business two months ago — before that it was a computer hardware shop.

Pasesoft, 213-215 Market Street, Hyde, Cheshire SK14 1HF

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Continued from front page

concerned that's not the target."

And the other two planks in his election platform?

He said: "You've got to have more than one policy. And one of the things that annoys me is that the 70mph speed limit was brought in as a temporary restriction — like income tax — yet car safety has got better. This is a restriction on technology and it's bloody silly."

And he has an imaginative reason for giving pensioners passes, like Railcards, for cheap cat food.

A survey had shown people with pets were more content and less likely to suffer from illness, including arthritis. And arthritis sufferers find it difficult to use computer keyboards.

He said the BASIC party — unlike most political parties, it has not members — had "just evolved."

He explained: "It really did seem silly that all those political parties were rabbiting on about things which were really rather trivial. We thought why not go on about trivial things in a humourous manner?"

Mr Dick has ruled out campaigning among the voters. He said: "I can't see myself standing outside Safeways for thenext few days. That's not the wey to solve the world's problems.

"I went out yesterday to the local shops — I thought I'd start near home - and I had no idea there was so much apathy. I asked one woman: 'Hello, do you live around here?' And she said: 'What's it got to do with you?'"

He has, however, been distributing a leaflet which shows him wearing a rosette in the BASIC party colours — yellow, dark maroon and mauve.

The leaflet points out: "He is the proud owner of a 911 Porsche and breeds Colour Point Persians — neither of which has had undue influence on the policies of the BASIC party."

Mr Dick programs in BASIC on minicomputers, mainly for financial data processing, and uses a VIC 20 for fun.

He has seven opponents in Hammersmith: Tory, Labour, SDP/Liberal Alliance, Independent Liberal, Workers Revolutionary Party, National Front and Ecology Party.

But what does his wife think about his standing for election?

Jane Dick, a press officer, said: "I was jolly delighted. I think it's great, but not for the reasons you might think.

"I objected when a politician said on television that nuts — and he meant people like Peter — should not stand for Parliament and that the deposit should be raised.

Candidate Peter Dick with computer and Persian

"Why shouldn't people like that road safety candidate and all the other splendid people be allowed to stand? I was all for standing myself.

"Let the eccentrics of the world unite. There's not enough of them."

"Is Peter a nutter? That's a bit unfair. He believes in enjoying life. There's more to life than working nine to five, five days a week and pottering in the garden at weekends."

And does she support all of Mr Dick's policies?

She said: "I suppose I'd better say yes. But I don't know that I go along with lifting the limit."

Micro firms slammed by ASA

More computer companies have been caught out by the Advertising Standards Authority after complaints from the public about misleading ads.

Sinclair has come in for a lot of flak over the screen pictures used in its early Spectrum ads. The pictures suggested the Spectrum was capable of more sophisticated graphics than it can, in fact, produce, by failing to show the pixel structure of screen images and implying that images could be made to fill the entire screen.

And in stating that the Spectrum could be used with "virtually any TV", Sinclair omitted to mention that there had been incompatibility problems with several TV makes.

But the company has now promised to mend its ways after having its knuckles rapped by the ASA.

Delivery dates were a sore point for members of the public who complained about Fuller Micro Systems, of Liverpool. Fuller claimed it could deliver the goods within 14 days — but customers found they had to wait a lot longer, and the ASA agreed.

A hardware company, Newbury Data Recording, was slammed for advertising high speed printers. When customers tried to order the printers, they found they were not yet available.

And an ad by Scotcade for the NewBrain, saying it had "screen editing, maths, BASIC and graphics — usually considered optional extras" and that "its graphic and video capabilities are second to none" was withdrawn after ASA action.

A member of the public pointed out that all the so-called "extra" features were now standard for home micros, and that the NewBrain's graphics were indeed out of the ordinary — because they were only in black and white.

Epson, however, came out with its head held high after a complaint about an ad for its HX 20 computer showing a man using the micro in the bath.

The complaint felt that, though the HX-20 works on batteries, it had a rechargeable power supply that should not be used near water.

After consultations with the Royal Society for the Prevention of Accidents, it was decided that users were unlikely to recharge the HX 20 while taking a bath even if they wanted to — because of the lack of power points in bathrooms.

Advertising Standards Authority, Brook House, 2 16 Torrington Place, London WC1 7HN

It's a case for the Spectrum

On sale now are dk'tronics' new replacement keyboards for the ZX81 and Spectrum.

As well as the usual keys, they include an extra numeric keypad for time when you want to enter a lot of numeric data.

To fit the keyboard you remove the computer from its original case and screw it into the new one. The ZX81 version includes a motherboard which allows extra memory to be fitted inside the case.

And there's room inside for other add ons, like the power supply.

Price: £45 inclusive

dk'tronics, Unit 2, Shire Hill Industrial Estate, Saffron Walden, Essex CB11 3AX

The June Top Ten in Spectrum software at W. H. Smith.

sinclair
ZX Spectrum
FLIGHT SIMULATION
PSION
48K RAM

Flight Simulation
Sinclair
48K £7.95

Melbourne House
software for the
48K SPECTRUM
PENETRATOR
Amazingly Fast Arcade Action!
Includes Training Mode and
Unique Customising Feature
The fastest and most exciting
game for your 48K Spectrum

Penetrator
Melbourne House
48K £6.95

The range of software available for the Sinclair Spectrum is to say the least, extensive.

So every month at W. H. Smith, we review the range with particular reference to presentation, challenge, excitement and value for money. And because we're quite severe it's a difficult job finally to arrive at a Top Ten. But as you can see, not impossible.

You don't have to take our word for it.

At W. H. Smith we stock the widest selection of Spectrum Software, so you can judge for yourself.

Title	Producer	K RAM	Price
Arcade Games			
Meteor Storm	Quicksilva	16	£4.95
Space Intruders	Quicksilva	16	£4.95
Time Gate	Quicksilva	48	£6.95
Gulpman	Campbell	16	£4.95
Spectral Invaders	Bug Byte	16	£5.00
Meteoroids	Softek	16	£4.95
Planetoids	Sinclair	16	£4.95
Hungry Horace	Sinclair	16	£5.95
Space Raiders	Sinclair	16	£4.95
Mazeman	Abersoft	16	£4.95
Nightflight	Hewson	48	£5.95
Ground Force Zero	Titan	16	£5.00
Caterpillar	CDS	16	£5.95
Leapfrog	CDS	16	£5.95
Gobble A Ghost	CDS	16	£5.95
Centi Bug	DK Tronics	16	£4.95
3D Tanx	DK Tronics	16	£4.95
Cruising	Sunshine	16	£4.95
Blind Alley	Sunshine	16	£4.95
Derby Day	Computer Rentals	48	£5.95
Jackpot	Computer Rentals	48	£4.95
Escape	New Generation	16	£4.95
3D Tunnel	New Generation	16	£5.95
Gobblemen	Artic	16	£4.95
Galaxians	Artic	16	£4.95
Invasion Force	Artic	16	£4.95
Sentinel	Abacus	16	£4.95

Chess
Sinclair **£7.95**
48K

Starship Enterprise
Silversoft **£5.95**
48K

Horace Goes Skiing
Sinclair **£5.95**
16K

Schizoids
Imagine **£5.50**
16K

Muncher
Silversoft
16K **£5.95**

Mined-Out
Quicksilva
48K **£4.95**

Transylvanian Tower
Shepherd
48K **£6.50**

Embassy Assault
Sinclair
48K **£4.95**

Title	Producer	k RAM	Price
Avenger	Abacus	16	£4.95
Cyber Rats	Silversoft	16	£5.95
Arcadia	Imagine	16	£5.50
Ground Attack	Silversoft	16	£5.95
Orbiter	Silversoft	16	£5.95
Slippery Sid	Silversoft	16	£5.95
Strategy Games			
Battle of Britain	Microgame	48	£5.95
Nanotrik Puzzle	Phipps	16	£4.95
Chess	Artic	48	£9.45
Voice Chess	Artic	48	£9.95
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Football Manager	Addictive	48	£6.95
Chess-The Turk	Oxford	48	£8.95
Dictator	DK Tronics	48	£4.95
Everest Ascent	Shepherd	48	£6.50
Dallas	CCS	48	£5.95
Adventure			
Labyrinth	[illegible]	16	£5.95
Planet of Death	Sinclair	16	£6.95
Inca Curse	Sinclair	48	£6.95
The Hobbit	Sinclair	48	£14.95
Ship of Doom	Artic	48	£6.95
Espionage Island	Artic	48	£6.95
Rescue	Computer Rentals	48	£5.95
The Orb	Computer Rentals	48	£5.95
Utility			
M/C Code Test Tool	Oxford	16	£9.95
Editor/Assembler	Oxford	16	£9.95
Compiler	Softek	16	£34.95
Soft Talk II	C P Software	48	£6.95
Spectsound	PDQ	16	£5.95
Family Games			
Reversi	Sinclair	16	£7.95
Othello	CDS	16	£5.95
Golf	R and R	16	£3.75
Conflict	Martech	48	£11.95
Test Match	Computer Rentals	48	£5.95
Backgammon	C P Software	48	£5.95
Draughts	C P Software	48	£6.95
Practical			
Vu Calc	Sinclair	16	£8.95
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Program Collections			
Shiva Special 1	Shiva	16	£5.95
Over The Spectrum 1	Melbourne House	16	£5.95
Over The Spectrum 2	Melbourne House	16	£5.95
Over The Spectrum 3	Melbourne House	16	£5.95

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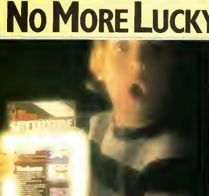

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Top Twenty programs for the Spectrum

1	Flight Simulation	Psion (1)
2	Hobbit	Melbourne House (2)
3	Penetrator	Melbourne House (3)
4	Horace Goes Skiing	Psion/M House (5)
5	Transylvanian Tower	Richard Shepherd (4)
6	3D Tanx	dk'tronics (8)
7	Arcadia	Imagine (8)
8	Football Manager	Addictive Games (6)
9	Chess	Psion (10)
10	Planet of Death	Artic (9)
11	Hungry Horace	Psion/M House (11)
12	3D Tunnel	New Generation (13)
13	Time Gate	Quicksilva (12)
14	Avenger	Abacus (17)
15	Space Raiders	Psion (15)
16	Planetoids	Psion (14)
17	Orbiter	Silversoft (18)
18	Battle of Britain	Microgame (16)
19	Ground Attack	Silversoft (20)
20	Escape	New Generation (–)

Compiled by W H Smith Figures in brackets are last week's figures

Top Ten programs for the Dragon-32

1	The King	Microdeal (1)
2	Space War	Microdeal (2)
3	Planet Invasion	Microdeal (3)
4	Defense	Microdeal (5)
5	Alcatraz	Microdeal (6)
6	Katerpillar Attack	Microdeal (9)
7	Madness & Minotaur	Dragon (–)
8	Chess	Dragon (8)
9	Wizard War	Salamander (7)
10	Basic Tutorial	Ampalsoft 10)

Compiled by Boots Figures in brackets are last week's positions

Top Ten programs for the ZX81

1	Flight Simulation	Psion (1)
2	QS Scramble	Quicksilva (3)
3	3D Monster Maze	New Generation (2)
4	Chess	Psion (4)
5	Space Raiders	Psion (5)
6	Catacombs	J K Greye (6)
7	Galaxians	Artic (7)
8	1K Games for 1K	J K Greye (8)
9	Gulp	Campbell (9)
10	Scramble	[illegible] (10)

Compiled by W H Smith Figures in brackets are last week's positions

Top Ten programs for the VIC 20

	Panic	Bug Byte (1)
	Cosmiads	Bug Byte (3)
	Race	Commodore (5)
	Blitz	Commodore (8)
	Wacky Waiters	Imagine (4)
	Intro to Basic 1	Commodore (9)
7	Asteroids	Bug Byte (2)
8	Amok	Audiogenic (10)
9	Arcadia	Imagine (6)
10	Ah Diddums	Imagine (–)

Compiled by Boots Figures in brackets are last week's positions

Brian Candler and Clive Wright — taking on a giant

Commodore's rivals, aged 15

Two fifth formers are taking on the might of Commodore with their extended BASIC for the Commodore 64

It costs £19 95 on tape, undercutting Commodore s long-awaited Simons BASIC cartridge by £30

However, the company's technical services manager, Rod Wellburn, pointed out that its version had a big design team behind it as well as offering more new commands

Clive Wright and Brian Candler both 15, met at school and the idea for BC BASIC came after Clive said to his friend "I wish I had IF THEN ELSE on my Commodore 64"

Then Brian tackled REPEAT UNTIL successful ly Clive wrote out a list of 300 commands and, he said, Brian managed 90 of them, all in machine code and using just 6K of RAM

They have formed BC Computers with £110 — £30 savings from Brian and Clive and £50 from Brian's mother, Mrs Mary Candler who is also dealing with their post

They have spend £60 on an advertisement and another £11 17 is buying 25 blank cassettes to fulfill early orders until they know if the demand will make it worthwhile to go to a commercial duplicating company

Meanwhile both are in the middle of sitting exams for 10 O-levels

Already they are planning more software products BC BASIC is due on sale in about a week and at the same time there will be two versions of a familiar sounding game called Pakman, one in 64 BASIC and the other making use of BC BASIC

Then there will be FIG-FORTH for the 64, more games and a graphics aid

Clive said "My dad's taking it all with a bit of suspicion at the moment He's waiting until the money comes in until he says 'yippee' He's quite amazed at what we've done so far

"He thought it was another of my ideas which would come crashing to the floor My mother is less cautious — but she'll only believe it when it happens"

Among the commands offered by BC BASIC, said Clive, are PLOT and DRAW, PAPER and INK, HIMEM, sound instructions, AT and BORDER It also has the ability to switch two high-resolution screens

Commodore's Simons BASIC, named after the originator David Simons, adds 114 instructions and will be launched at the 4th International Commodore Computer Show, at the Cunard Hotel, Hammersmith, on June 9-11

Mr Wellburn said "Good luck to them You can't blame them for trying I never knock the opposition"

Without seeing BC BASIC, he said he could not judge it But he did says that tape had disadvantages which Commodore had overcome by putting Simons BASIC in a cartridge

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Game design and dragonware: R. Lowry

Cosmic Defender – for the BBC model B

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Game design and dragonware: R. Lowry

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Why computer games aren't up to scratch

The Sigma Society has campaigned since 1975 to promote games playing and to improve the rewards and recognition given to the board games inventor. For example, we have tried to persuade manufacturers to publish and promote the inventor's name, with varying degrees of success. And we have tried to increase the appallingly low royalties — five per cent of the wholesale price, on average — paid to inventors, without any success at all.

So I'm not sure whether to cheer or cry when I read in Home Computing Weekly, that computer games inventors have their names associated with their programs and receive royalties of 15-33 per cent.

My ambivalence arises from the type of computer game so far available. There seem to be three categories: the cosmic astro invaders/frogger type, adventure games, and micro versions of existing board games.

The first category is, frankly, uniformly boring. It is purely movement co-ordination oriented, and makes no intellectual demands. Adventure games can be more taxing, but graphics are usually rudimentary or non-existant. And I can't, for the life of me, see the point in playing a version of Monopoly — which is 50 years old anyway — on a television screen.

These aren't just my opinions. When I acted as a consultant to a well known video games company, their research confirmed that customers quickly get bored with action games.

What I hope will happen as the industry matures is that professional games inventors, such as we have at Sigma, will co-operate with programmers or, better still, learn to program themselves. That way, the expertise of games invention could be combined with the skills of the programmer. Sadly, however, those of our members currently struggling to understand programming are agreed that most manuals are turgid, badly written, and a long way from being user friendly.

As a professional games inventor, the parallels between writing games rules and writing an instruction primer are obvious. In both cases there are two universal rules. One: start from scratch and assume complete ignorance of the subject by the reader. Two: try to envisage every major eventuality and explain concisely but clearly what to do in every case. I would personally add that, three, you should lighten the subject with a little humour — but try to find that in a user's manual!

Eventually, I hope to see a marriage between games inventors and software producers, with those who enjoy playing games as the ultimate beneficiaries. But we will only extend the numbers and involvement of "gamers" when we start to satisfy their intellectual desires — outwitting human opponents will always be more satisfying than outshooting a program.

Jack J Jaffe
Founder, Sigma
3 Northwood Road, London N6

● What makes you pleased or annoyed about the micro scene, hardware or software? We welcome contributions for this column. Send them to: Paul Liptrot, Opinion, Home Computing Weekly, 145 Charing Cross Road, London WC2H 0EE. Please include your occupation and your interest in computing.

Draw it again, Aaran

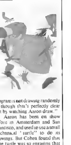
If you're in London this month or next, drop into the Tate Gallery and see a computer artist at work.

Aaron, a program written by British artist Harold Cohen, will be churning out drawings at the rate of about 12 per hour, with the aid of four specially-built drawing machines.

But don't expect to be able to run Aaron on your home micro. According to Cohen the program is "about as long as a short novel", and uses a powerful VAX-750 minicomputer.

It is designed to imitate the way in which works of art are created by human beings, by following a series of artistic strategies like drawing a line around something or emphassing an existing edge.

Confused? You'rte not alone. Cohen said: "Ove and over again I've had to explain to people that no, there is not a different program for each drawing, and no, I did not do the drawings in advance and in fact have never seen them before, and no, the program is not drawing randomly — though that's perfectly clear just by watching Aaron draw."



Aaron has been on show before in Amsterdam and San Francisco, and used to use a small mechanical "turtle" to do its drawings. But Cohen found that "the turtle was so engaging that people tended to look at it rather than the drawings, so I had to retire it."

The exhibition is on until July 24, and admission is free.

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U.S. SCENE

Are micro camps really best for kids?

Last year's novelty becomes this year's problem. Case in point: computer camps.

Last summer we noted with some amusement that Mom and Dad could now get rid of Junior and little Sally for a few weeks by sending them off to summer camps (mostly in California, where else?) which featured computer literacy as their drawing card instead of the more traditional offerings such as sailing, horseback riding, baseball, and swimming.

So what is wrong with this, you say? Plenty, I think. If you go to any arcade in nearly every large shopping mall in California (and probably everywhere else over here) you will see crowds of kids playing their favorite video games. The games make so much money and are so popular that you now see them in more non-"traditional" locations such as hamburger stands and gas stations (petrol stations to you).

The computer versions of these arcade games are generally offered to kids attending the camps, along with (we hope) tutorials on programming and more worthy pursuits re computers. And I suppose that that is all right, providing little Johnny and Suzy are able to play outside once in a while.

What worries me, though, is that Mom and Dad, having read so much about the importance of being computer literate, and about how everyone who is intending to be anyone must acquire computing skills, will send their kids off to become the programmers of the future in just a couple of weeks.

If Mom and Dad would just be satisfied with having their kids come back home more competent than when they left, that would be OK. However, what may be more typical is that they will expect, or even demand, that their kids become able to be the top people in the field because of this experience.

Perhaps we should turn to the world of sports for a parallel situation. For example, how many children turn out to be miserable and emotionally scarred by pushy parents who tried to turn little Emily or Joey into Chris Evert Lloyd or Jimmy Connors but pushed them too hard when they had too little talent? Too many, I fear.

What this computer summer camp business may initially turn out to be is a race to "keep up with the Joneses." This is unfortunately all too common here. This would be bad enough without the thought that the price of keeping up is the emotional well being of the kids.

I feel I am a competent programmer and as computer literate as the next person. However, I sure am glad Mom and Dad decided I should learn how to sail, ride a horse, and learn some social skills when I was 14 and they sent me to summer camp.

I wonder how many teenagers will come back from camp this year well on the way to becoming complete nerds, capable of socializing with no-one and relating to nothing but a terminal, and excellent at only one physical skill — typing. We'll see what happens.

★ ★ ★ ★

If you want to learn more about microcomputers but are not technically inclined, there is a new magazine out that you might be interested in. It is called Micro Discovery. Its emphasis is on the human factor in comupter. In other words, how microcomputing is affecting our lives. New products are covered, but the information is presented from the user's viewpoint, not the hardware engineer's. It looks very good to me. If you want to learn more, contact Micro Discovery, P.O. Box 7500, 80 New Bridge Road, Bergenfield, New Jersey 07621.

If you own a TI 99/4a you will be interested in this. A firm called Elek-Trek Inc. is offering excellent prices on hardware and software for your machine.

It has recently placed full page ads having very small print to allow space for all the items they carry — in several electronics magazines. As an example of their discount price on hardware, a PHP 1200 expansion box which lists for about $250 is being offered for $180. They also offer software with a discount of at least 10 per cent on average. You can contact them for a catalog: Elek Trek Inc., 6557 N. Lincoln Avenue, Chicago, Illinois 60645 (312) 677 7660.

★ ★ ★ ★

Do you own a VIC 20? Are you interested in the FORTH language? If so, this will be of interest to you. Human Engineering Software, of 71 Park Lane, Brisbane CA 94005 (415) 468-4110, has just brought out a cartridge for the VIC 20 that contains a version of the FORTH language supporting all standard FIG—FORTH (FIG is the FORTH Interest Group) commands except the disc commands and a few higher level words.

Briefly, FORTH is a very powerful and relatively easy language to learn. It takes up very little room in memory, which makes it ideal for machines like the VIC. The language has been slow to catch on in the micro world, although there are some excellent commercial applications written in FORTH. It is also a very fast language, usually on the order of 10 times quicker than an interpreted BASIC for the same machine.

Used in conjunction with a basic FORTH text, this system, available for only £59.95 plus shipping, is a real bargain if you feel limited by BASIC. This system will work in the basic VIC memory configuration and will handle memory expansion to 29K, but cannot use the 3K expansion cartridge.

★ ★ ★ ★

If you own any of the following computers: Atari, Commodore, Sinclair Timex, Ohio Scientific or Apple, I recommend you should send for a catalogue from Hofacker.

This firm produces an excellent product offering including books, software, hardware, and peripherals. All items are moderately priced and described in one of the best catalogues I have seen associated with this industry. Descriptions of each book list a summary and its table of contents and book review reprinted from a magazine if one has been done.

Descriptions of programs are complete and are often accompanied by a sample printout and/or programming examples of its use. Among other things, they offer several books on Atari programming including FORTH for the Atari, a word processing program for the Atari, a powerful assembler for the VIC 20, a word processing program for the Atari, a powerful assembler for the VIC 20, an expansion experimenter bread board for the VIC 20 that plugs directly into the expansion slot, a machine language monitor for the ZX 81, a prototyping board for the ZX 81, a machine language monitor for the ZX 81.

Most of the items in the catalogue sell for well under $30. Ask for the Hofacker catalog when you write to Elcomp Publishing Inc., 53 Redrock Lane, Pomona CA 91766 (714) 623 8314. They accept Access and Barclaycard too, by the way. Anticipate about a 15 per cent charge for shipping.

That's all for this week.

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It's a tape — and a magazine

Sitting on a floral sofa in a 200-year old Cotswolds farmhouse, Iolo Davidson created a computer magazine with a difference — it's all on a cassette tape

It took two months to put together, working into the small hours with just two of his dogs for company

The result is Spectrum Computing, now on sale at £2.99

And, despite his dislike of cities, Mr Davidson, 37, made the journey from his 18 acre farm to London to see his magazine launched by ex Tomorrow's World presenter William Woollard.

The venue, chosen by the publishers to contrast with the product, was one of Fleet Street's oldest pubs

Mr Davidson's magazine, which works on both Spectrum models, includes software reviews — readers can see and hear samples of commercial programs — a Morse code trainer, chess graphics, a routine for turning sideways and upside down, plus two arcade games

Altogether there is 80K of code which readers load following on-screen prompts. Any part of the magazine can also be loaded by using its file name

Mr Davidson said "You get a lot of code for your money and you don't have to type all the stuff in. And if you buy some computer magazines you'll be lucky if you find two of three pages for the Spectrum

"I've put in the sort of things that interest me. We don't want to go over the heads of some of the readers nor do we want to talk down to them

"It's a difficult balance to strike and I hope I've achieved it

"Anyone can use it easily and we invite people to use some of the routines in their own programs "

Mr Davidson has a Welsh mother — hence his first name — and an American father who met during the war. His father was a navigator on B17 bombers and his mother a nurse. They met after his father was released from a German PoW camp

And, although he was born in Wales, Mr Davidson spent 16 years in America, returning 17 years ago

He was given his first computer, a £300 Triton with 2K of RAM, at Christmas 1979 and taught himself programming from magazines and books. He was a regular contributor of programs and articles to magazines

Before then his jobs has included silvesmith, petrol pump attendent and — in San Fransisco — a rag-picker's apprentice

Now he shares a farm near Cheltenham with a writer, Janet Sloss. They have about 60 sheep, three calves and a cow called Daisy, geese, cats and a ferret. Their dogs are Tick ("because it's watchdog") and his two companions when he is programming, a labrador-type mongrel called Legs and a pedigree Saluki named Zabna

When he was invited to edit Spectrum Computing, Mr Davidson said his reaction was: "I though I'd made it

"It was important to me that I would not have to come into the office every day

"I wouldn't like to work in London. There's too many people."

Mr Davidson, who said Spectrum Computing was the first commercial magazine coming out in this form. But there is a problem with some computers because they keep bringing out revised models.

"You could have had the idea two of three years ago but it would not have worked then. You need a popular computer and one with a reliable cassette interface "

And he revealed some of the contents of the next bi-monthly issue: a fruit machine game written by a 13-year old, a Frogger-type game, a dice-logic game and a sound customiser plus more reviews. And he is adding a siren sound to remind readers when to stop the tape recorder

He said: "I've been coming up with more tricks for future issues

"It is a proper magazine, not just a bunch of software linked together. But we can do a lot more than paper magazines

"We want contributions from readers and there's going to be advertising too "

Mr Davidsom edits his magazine in the living room of his farmhouse, built in 1750, in front a big stone fireplace with a Spectrum perched on a footstool with tapes and papers spread around. Often he is coding until three in the morning

As well as two Spetrums — 16K and 48K to ensure the magazine works on both — the household is also equipped with a 64K Superbrain plus two floppy disc drives and a Praxis typewriter as a printer

Janet Sloss is using it to write her books

Spectrum Computing is published by Argus Specialist Publications, owners of Home Computing Weekly

Spectrum Computing, 145 Charing Cross Road, London WC2H 0EE 01-437 1002. Distribution: 513 London Road, Thornton Heath, Surrey CR4 6AR

SPECTRUM
COMPUTING

Iolo Davidson and his magazine on tape

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ARTICLES on using home computers should be no longer than 2,000 words. Don't worry about your writing ability — just try to keep to the style in HCW. Articles most likely to be published will help our readers make better use of their micros by giving useful ideas, possibly with programming examples. We will convert any sketched illustrations into finished artwork.

TIPS are short articles, and brief programming routines which we can put together with others. Your hints can aid other computer users

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A traditional adventure game in which the player has to find the 12 cunningly hidden signs of the Zodiac which lead him to greater treasures. The player manipulates objects through simple sentences which the program can understand and can ask for his score at any time. A save game feature is also included. Requires a 48k machine.
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Using high resolution graphics to display the chess board this package will play a challenging game of chess with five levels of skill. The computer looks ahead for its own moves plus its opponent's. The skill level dictates how far the computer looks ahead although at the expense of more time. All chess rules including Castling and En Passant are obeyed. Requires a 48k machine.
Price: £9.99 including VAT and 40p postage and packing.

ORIC FORTH

This is a cassette-based implementation of FIG-FORTH, the language distributed by the Forth Interest Group in the United States. It has been extended to utilise the graphics and sound capabilities of the Oric. It is supplied with an editor and a full Forth assembler. A 96-page manual is included in the package. A demonstration music program is also supplied. Requires a 48k machine.
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Can you fend off the alien nasties?

Making full use of sound and colour, Grant Privett and Martin Jones wrote Blockbuster for the 48K Oric-1

In Blockbuster you must move fast to catch the rapidly descending nasties Individually they are no match for you but left unchecked they collect below you and eventually overwhelm your position

The way to survive against this pulsating alien rain is catch them before they reach the ground To do this you must use the left and right cursor controls to position your bat in their path

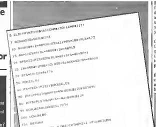
The game makes full use of the Oric's excellent sound and colour facilities and you are left in no doubt when you have been beaten

Variables

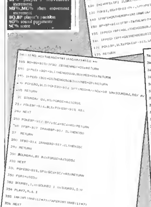
A top line of screen
ZB bottom line of screen
Z player's level
Q% player's character
ZL,ZR left and right movement limits
PL%,PR% cursor control PEEK locations
BL% Alien's character
BI% player's movement increment
MF%,MG% alien movement increment
BQ,BP player's position
SO% sound parameter
SC% score

How it works

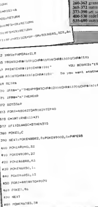
10-30 variable table
50-90 new player's position
120-130 player's movement
140-205 alien's movement
220-250 catch routine
260-362 grande finale
365-372 messages/rerun
373-390 set screen colours
400-530 redefine characters
535-690 instructions



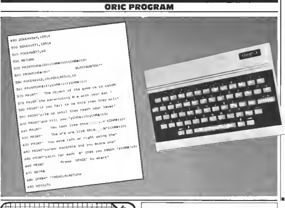
```
5 CLS:PRINTCHR$(6);CHR$(20);CHR$(17)
7 GOSUB535:GOSUB373
10 A=48084:Z=48900:Q%=61:PR%=188:PL%=172
15 A%=1:O%=0:ZL=48888:ZR=48915
20 SP%=32:P2%=520:BL%=87:BI%=40:BF=1
25 ZB=49848:FBB=32:BS%=5:AB%=42:SM=48000
30 BT%=10:CC=46776
50 POKEZ,Q%
60 PF%=PEEK(P2%):DOKECC,O%
70 IFPF%=PR%THENPF%=A%:GOSUB120:GOTO90
80 IFPF%=PL%THENPF%=-A%:GOSUB120
90 GOSUB140:DOKECC,7270
100 GOSUB180
110 GOTO50
120 Z=Z+PF%:IFZ<ZLORZ>ZRTHENZ=Z-PF%:RETURN
130 POKEZ,Q%:POKEZ-PF%,SP%:RETURN
140 IFMF%=O%THENBP=INT(RND(A%)*RS%)+A
150 BP=BP+BI%:IFBP>ZBTHENMF%=O%:RETURN
155 IFPEEK(BP)=BL%THENGOSUB260:MF%=O%:RETURN
160 IFPEEK(BP)=O%THENGOSUB220:MF%=O%:RETURN
170 POKEBP,BL%:POKEBP-BI%,SP%:MF%=A%:SO%=BP-SM:SOUNDA%,SO%,A%
175 RETURN
```



```
180 IFMG%=O%THENBQ=INT(RND(A%)*RS%)+A
185 BQ=BQ+BI%:IFBQ>ZBTHENMG%=O%:RETURN
190 IFPEEK(BQ)=BL%THENGOSUB280:MG%=O%:RETURN
195 IFPEEK(BQ)=O%THENGOSUB300:MG%=O%:RETURN
200 POKEBQ,BL%:POKEBQ-BI%,SP%:MG%=A%:SO%=BQ-SM:SOUNDA%,SO%,A%
205 RETURN
220 SOUNDA%,O%,O%:FORDE=A%TOBS%
230 POKEBP-BI%,BL%:POKEBP-BI%,AB%
240 NEXT
250 POKEBP-BI%,SP%:SC%=SC%+A%:RETURN
260 IFBP-BI%>ZRANDBP-BI%<ZLTHEN350
270 RETURN
280 IFBQ-BI%>ZRANDBQ-BI%<ZLTHEN350
290 RETURN
300 SOUNDA%,O%,O%:FORDE=A%TOBS%
320 NEXT
330 POKEBQ-BI%,SP%:SC%=SC%+A%:RETURN
350 FORI=0TO50
352 SOUND1,1,0:SOUND2,1,0:SOUND3,1,0
354 PLAY7,0,4,1
355 INKINT(RND(1)*7):PAPERINT(RND(1)*7)
356 NEXT
360 PLAY0,0,0,0:EXPLODE
```



```
362 INK0:PAPER6:CLS
365 PRINTCHR$(10);CHR$(10);CHR$(10);CHR$(10)
367 PRINTCHR$(10)CHR$(10)"        YOU SCORED:";SC%;"POINTS"
368 PRINTCHR$(10);CHR$(10)"   Do you want another game (Y/N)?"
369 GETR$
370 IFR$="y"THENPRINTCHR$(20);CHR$(17);CHR$(6):PING:RUN
371 IFR$="n"THENEND
372 GOTO369
373 FORI=48042TO49002STEP40
375 C=INT(RND(1)*7)
377 IFI>ZIANDC=5THEN375
380 POKEI,C
390 NEXT:POKE48082,0:POKE49002,0:PAPER0
400 POKE48040,32
410 POKE49080,32
420 POKE46888,43
430 POKE46850,14
440 POKE46851,12
450 FORI=49000TO49079
460 POKEI,96
470 NEXT
480 POKE46783,38
```



```
490 DOKE46567,15914
500 DOKE46571,15914
510 POKE46573,62
530 RETURN
535 PRINTCHR$(30);CHR$(10);CHR$(10)
540 PRINTCHR$(4)"                BLOCKBUSTER!"
550 POKE48162,10:DOKE48202,10
560 PRINTCHR$(4);CHR$(10);CHR$(10)
570 PRINT"   The object of the game is to catch"
575 PRINT the parachuting W s with your Bat "
580 PRINT"if you fail to do this then they will"
590 PRINT"pile up until they reach your level"
600 PRINT"and kill you!";CHR$(10);CHR$(10)
610 PRINT"    You look like this  ....-";CHR$(10)
620 PRINT"    The W's are like this   W";CHR$(10)
630 PRINT"  You move left or right using the"
640 PRINT"cursor controls and you score one"
650 PRINT"point for each  W' that you catch ";CHR$(10)
660 PRINT           Press 'SPACE' to start"
670 GETA$
680 IFA$=" "THENCLS:RETURN
690 GOTO670
```

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Ten useful tips for your ZX81

There's no need to re-invent the wheel. Nick Godwin has been digging around in his ZX81 and has come up with these handy routines to make program writing easier

Tip 1

This routine demonstrates how PEEK 16442 can be used to operate SCROLL only when the bottom of the screen is reached

```
AUTOMATIC SCROLL AT BOTTOM OF
THE SCREEN

  10 INPUT X
  20 PRINT X
  30 IF PEEK 16442<3 THEN SCROLL

  40 GOTO 10
```

Tip 2

Clearing the screen following a SCROLL statement can be a painfully slow business, as demonstrated by the first listing. However, these modifications allow the screen to be cleared smoothly and quickly

```
  10 FOR J=0 TO 21
  20 LET X$=""
  30 FOR K=0 TO INT (RND*40)
  40 LET X$=X$+"X"
  50 NEXT K
  60 IF LEN X$>32 THEN LET X$=X$
( TO 32)
  70 SCROLL
  80 PRINT X$
  90 NEXT J

XXXXXXXXXXXXXXX
XXXXXXXXXXXXXXXXXXXX
XXXXXXXXXXXXXXXXXXXXXXXXXXXXX
XXX
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
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XXXXXXXX
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
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MODIFICATIONS FOR SMOOTH CLS

  70 SCROLL
  80 PRINT X$
  85 IF PEEK 16441<1 THEN PRINT
[illegible]
  90 NEXT J
```

Tip 3

ZX81 users are advised to SAVE a program several times as a precaution against tape corruption. Avoid the tedium by using these routines which automatically SAVE the program a number of times in succession, but when LOADed the program will RUN automatically. The first routine works when RAMTOP is not reset, the second routine will work for any setting of RAMTOP

```
AUTOMATIC MULTIPLE SAVE

9000█INPUT X$
9010 POKE 16388,3
9020 POKE 16388,PEEK 16388-1
9030 SAVE X$
9040 IF PEEK 16388 THEN GOTO 902
0
9060 RUN

MODIFICATION IF RAMTOP HAS
BEEN RE-SET

9000 INPUT X$
9005 LET X=PEEK 16388
9010 POKE 16388,3
9020 POKE 16388,PEEK 16388-1
9030 SAVE X$
9040 IF PEEK 16388 THEN GOTO 902
0
9045 POKE 16388,X
9050 RUN

NOTE THAT LINE 9050 SHOULD BE
CHANGED TO       9050 GOTO N
IF DATA IS TO BE PRESERVED
```

Tip 4

To avoid printing the cursor in program listings, LLIST a non-existent number before the first line number required in the listing

```
LLIST 100

100█REM DUMMY LISTING.
110 REM
120 REM
130 REM
140 REM
150 REM


LLIST 99

100 REM DUMMY LISTING.
110 REM
120 REM
130 REM
140 REM
150 REM
```

Tip 5

According to the ZX81 manual, lines 22 and 23 of the screen display are reserved for commands, input data, reports and so on This routine shows how these two lines can be accessed by the programmer Note that it is very important to POKE 16418,2 immediately after the PRINT statement Not also that number of string input will cause loss of these two lines, as demonstrated at line 30

```
  10 POKE 16418,0
  11 PRINT AT 22,0;"LINE 22",,"L
INE 23"
  12 POKE 16418,2
  20 IF INKEY$="" THEN GOTO 20
  30 INPUT X
```

```
 FAST

  10 POKE 16418,0
  11 PRINT AT 22,0,"LINE 22",,"L
INE 23"
  12 POKE 16418,2
  20 PAUSE 4E4
  21 POKE 16437.255
  30 INPUT X
```

Tip 6

The ZX81 "naturally" prints columns of figures tabulated at the left Human beings on the other hand, prefer numbers to be tabulated at the decimal point position This routine and sample display shows a useful line for neat tabulation of numbers

```
  10 INPUT X
  20 PRINT TAB 14-LEN STR$ INT A
BS X+(ABS X<.1)-(X<=0);X
  30 GOTO 10
```

```
       1234567
      -1234567
           456
          -987
            23
           -93
             9
             2.3
            -2
            -4.987
             0.9
            -0.9
              .08
             -.0789
              .000876
              .0987
             -.09876
```

Tip 7

It can be useful to display a limited number of decimal places This routine, with sample displays shows how the number X can be displayed to a pre-determined number of decimal places, rounding as necessary

```
  10 PRINT "HOW MANY DECIMAL PLA
CES?"
  20 INPUT D
  30 CLS
  40 PRINT "X","TO ",D," DEC. PL
ACES"
  50 INPUT X
  60 PRINT X,INT (X*10**D+.5)/(1
0**D)
  70 GOTO 50
```

```
X               TO 2 DEC. PLACES
10              10
10.1            10.1
10.111          10.11
10.115          10.12
99.99           99.99
99.999          100
.084            .08
.085            .09
-10.111         -10.11
-10.115         -10.12
-99.994         -99.99
-99.999         -100
-.0745          -.07
-.0755          -.08
X               TO 3 DEC. PLACES
1.1234          1.123
1.1235          1.124
0.995           0.995
0.9954          0.995
0.9965          0.996
.0004           0
.0005           .001
-1.1234         -1.123
-1.1235         -1.124
-0.9954         -0.995
-0.9965         -0.996
-.0004          0
-.0005          -.001
9.9994          9.999
9.9995          10
-9.9994         -9.999
-9.9996         -10
```

Tip 8

The combined operation of displaying a number pre-set number of decimal places and tabulating it neatly on the screen can cause a lot of headaches This listing overcomes the problem, with a somewhat convoluted but nevertheless essential line 60

```
X               TO 2 DEC. PLACES
10                    10
9                      9
9.991                  9.99
9.999                 10
-10                  -10
-9                    -9
-9.991                -9.99
-9.999               -10
.0123                   .01
-.0123                 -.01
-.015                  -.02
.015                    .02
99.999               100
-99.999             -100
99.994                99.99
-99.994              -99.99
```

```
  10 PRINT "HOW MANY DECIMAL PLA
CES?"
  20 INPUT D
  30 CLS
  40 PRINT "X","TO ";D;" DEC. PL
ACES"
  50 INPUT X
  60 LET Y=VAL STR$ (INT (X*10**
D+.5)/(10**D))
  70 PRINT X;TAB 22-LEN STR$ INT
 ABS Y+(ABS Y<.1)-(Y<=0),Y
  80 GOTO 50
```

Tip 9

The handy little routine starting at line 100 takes a copy of whatever is on the (fully expanded) screen into X$ To demonstrate, run the routine in fast mode, press newline when it stops and then, when it finally comes to rest, enter the command PRINT X$

```
  10 FOR J=1 TO 704
  20 PRINT CHR$ INT (RND*63);
  30 NEXT J
  40 PAUSE 4E4
  41 POKE 16437,255
 100 LET X$=""
```

▶

```
 110 LET Q=PEEK 16396+256*PEEK 1
6397+1
 120 FOR J=Q TO Q+704
 130 IF PEEK J=118 THEN LET J=J+
1
 140 LET X$=X$+CHR$ PEEK J
 150 NEXT J
```

Tip 10

The first listing allows input of two numbers, X and Y, which are then plotted. By entering 99 the function is changed to unplot. For example, run and enter 10,10,99,10,10. This routine works by POKEing address 16527 with the code for PLOT or UNPLOT as required.

The question is: How did I know which address to POKE? The problem is solved by the routine starting at line 9000, which can be tagged onto the end of any BASIC program and gives a display in three columns: 1 the address, 2 the value at the that address and 3 the character represented by that value.

```
   1 GOTO 10
   2 PLOT X,Y
   3 RETURN
  10 REM DEMONSTRATION PROGRAM
  20 INPUT X
  30 IF X=99 THEN GOTO 100
  40 INPUT Y
  50 GOSUB 2
  60 GOTO 20
 100 POKE 16527,246*(PEEK 16527=
252)+252*(PEEK 16527=246)
 110 GOTO 20
9000 FOR J=16509 TO 32767
9010 PRINT J;TAB 8,PEEK J,CHR$ P
EEK J;TAB 31," "
9020 NEXT J
```

```
16509    0
16510    1
16511    10       ▬
16512    0
16513    236      GOTO
16514    29       1
16515    28       0
16516    126      ?
16517    132      ▜
16518    32       4
16519    0
16520    0
16521    0
16522    116      ?
16523    0
16524    9        ▪
16525    5        ▌
16526    0
16527    246      PLOT
16528    61       X
16529    26       ,
16530    62       Y
16531    116      ?
16532    0
16533    3        ▬
16534    2        ▪
16535    6
16536    254      RETURN
16537    116      ?
16538    0
16539    10       ▬
16540    23       *
16541    0
16542    234      REM
16543    41       D
16544    42       E
16545    50       M
16546    52       O
16547    51       N
16548    56       S
16549    57       T
16550    55       R
16551    38       A
16552    57       T
```

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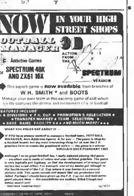

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You can also blast them with laser torpedoes — but you only have 20, so don't waste them

And you can put your ship into hyperspace as often as you like It means that your ship vanishes and reappears at another point on the screen at the speed of light

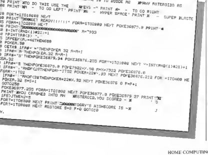
My program includes sound, score and high score The more asteroids you dodge the more points you are awarded

These are your controls

A left
S hyperspace
semi-colon fire missile
equals sign right

If you find the game too difficult to begin with, try changing line 500 to
500 FORT=1TO50 NEXT POKEA,32 S=S+1

The symbols in the program are explained below



```
100 FORA=1TO10 READA$ PRINTA$, FORB=1TO100 NEXT NEXT
105 DATA "[illegible]" A,S,T,E,R,O,I,D,S
110 FORA=1TO2000 NEXT POKE36878 15
180 PRINT "[illegible]THE OBJECT OF THIS    GAME IS TO DODGE AS   MANY ASTEROIDS AS
POSSIBLE.
190 PRINT "TO DO THIS USE THE    KEYS -" PRINT "= -  TO GO RIGHT
200 PRINT "A  -  TO GO LEFT" PRINT "S  -  HYPER SPACE" PRINT ";  -  SUPER BLASTE
R
220 FORT=1TO10000 NEXT
230 PRINT "[illegible]GET READY!!!!!!" FORA=1TO2000 NEXT POKE36879,8 PRINT"
235 FORA=1TO2000 NEXT
240 PRINT "[illegible]" A=7933
250 B=INT(RND(1)*22)+1
260 PRINTTAB(B) "."
265 IFPEEK(A)=46THEN600
270 POKEA,50
280 GETA$ IFA$="="THENPOKEA 32 A=A+1
290 IFA$="A"THENPOKEA,32 A=A-1
300 IFA$="S"THENPOKE36879,94 POKE36876,255 FORY=1TO1000 NEXT Y=INT(RND(1)*21)+1
POKEA,32
310 IFA$="S THENPOKE36879,8 POKE7922+Y,50 A=Y+7922 POKE36876,0
320 IFA$=";"ANDF<20THENFORX=1TO2 POKEA+22*X,93 NEXT POKE36876,212 FORX=1TO400 NE
XT FORX=1TO2
330 IFA$=";"ANDF<20THENPOKEA+22*X,32 NEXT POKE36876,0 F=F+1
500 POKEA,32 S=S+1
510 GOTO250
600 POKE36877,255 FORA=1TO1000 NEXT POKE36877,0 POKE36879 27 PRINT"
610 PRINT "YOU CRASHED INTO AN   ASTEROID.YOU SCORED -"S
615 IFS>JTHENJ=S
620 FORT=1TO8000 NEXT PRINT "[illegible]TODAY'S HIGHSCORE IS -"J
630 FORT=1TO8000 NEXT RESTORE S=0 F=0 GOTO10
READY.
```

Hints on conversion

Conversion should not be difficult as there are only two aspects to watch out for first, change the 22 in line 250 to the number of columns for your computer

For example, the Sharp has 40 columns, so the line would look like this
250 B = INT(RND(1)*22) + 1.

The other point to look for is changing the cursor controls — they are explained under How it Works

All the POKEs larger than 1000 are for colour and sound and so can be left out In line 240 A is defined as a variable to be 7933 This is the POKE location of the centre of the VIC's screen.

How it works

100-235 instructions. 105: clear screen, cursor down nine lines, right five lines; 180-200: clear screen, new line for each phrase; 230: clear screen, cursor down three lines, set white; 240: clear screen, cursor down 22 lines
250-260 chooses where asteroids should be positioned
265 checks to see if ship has hit asteroid
280-330 check for keyboard input
500-510 tells computer to return to 250 and scroll
600-630 score, high score and run again routines. 600: clear screen, print blue; 610: new line for each phrase; 620: clear screen, cursor down five lines, cursor down once

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ZX Spectrum
VU-FILE
PSION

These programs are designed to make molehills out of programming mountains. Our review panel tells you whether they do this trick

Vu-File Spectrum £8.95

VU-File for the ZX Spectrum has been on the market for several months. In that time it has deservedly remained one of the best-selling "serious" programs for home computers, offering a range of features that are matched by only a few, more expensive rivals.

With VU-File you not only can select the number of data fields required for your application, but can format the screen arrangement of the display of these fields in any way desired, and in any colour. Separate formatting of the printer output is also available.

All the usual features are present: add, delete, amend records, list, sort and search (sort and search work on any field), and save data on tape. There is also an inform mode, which aids file management. The machine-coded program gives a rapid response to all facilities.

On side B of the cassette is an example file called Gazetteer. This contains records of all European countries (16K) or all countries of the world (48K), providing a wealth of information for geography classes, and a demonstration of the power of this database program.

Another important feature is its availability through national retail outlets, no need for that frustrating wait when ordering by post.

D.N.

instructions	70%
ease of use	90%
display	90%
value for money	90%

★ ★ ★ ★ ★

Music Maker 48K Spectrum £5.75

Bellflower Software, 6 Rosewood Avenue, Greenford, Middlesex

It's an interesting idea to use the Spectrum to write and store musical notes, display manuscript and playback tunes. In this case, though, the idea doesn't work out in practise.

Any key signature can be chosen and a variety of time signatures. Notes are then entered one at a time to the stave, pitch and duration selected by the operator. Most musical notation is catered for, but some knowledge of music is necessary to use the program effectively.

But Music Maker is disappointing in three ways.

Editing is almost non-existent. You can only delete the last note entered on the stave, if you enter a lengthy tune and discover an error — tough.

Playback, even at the fastest of the 10 speeds, is very slow with an irritating pause at the end of each stave and a quite lengthy one when the screen is redrawn. A sound only option may have helped.

A printout facility is not provided. I am sure this would not have been too difficult.

The three main potential uses for this program — composing, replaying tunes and producing manuscript — are all spoilt by these problems — a great pity.

R.E.

instructions	70%
graphics	67%
playability	40%
value for money	20%

★

Synthesiser BBC B £5

Worm Software, 76 Hurstwood Road, New Oscott, Birmingham B23 5BY

Here's your chance to step on the road to stardom. Develop your musical talents to the full! Synthesiser allows you to play synthesised tunes by converting the keyboard into a musical keyboard.

A number of options are available. You can simply play a tune (although you cannot store your creation), try but and define 14 parameters called "envelopes" which can be changed to produce different sounds.

An instruction and information menu is provided which gives comprehensive details on how to use synthesiser. The instructions include a graphic display of keyboard notes as well as graphics showing, for instance, the relationship between pitch and time.

P.C.

instructions	90%
playability	90%
graphics	75%
value for money	90%

★ ★ ★ ★

Toolkit/ Screenkit Jupiter Ace £7.50

Remsoft, 18 George Street, Brighton BN2 1RH £7.50

Two excellent utilities from Garry Knight and the Jupiter Ace Users' Club (£1 off prices for members). No loading problems — spot on every time — and some really clever programming which you can use the Ace's LIST facility to study.

Tookit's Scan command displays any 16 bytes of memory, giving the addresses in both decimal and hex, the data in both and as an ASCII character followed by binary.

This display can be moved up with the 6 key, down with the 7 (but the documentation has them reversed).

There are also facilities for poke, mem and base stuff, plus a machine code definer.

Screenkit consists of a set of machine code routines for screen handling — left and right scrolls with and without wrapround, plus up and down. An impressive demo program can subsequently be deleted to save scarce bytes, and any individual facility can be selected out for inclusion in your own programs. You cannot have both programs simultaneously in 3K memory, as there are only 226 bytes free when Toolkit is loaded originally.

G.M.

instructions	80%
ease of use	90%
display	n/a
value for money	90%

★ ★ ★ ★ ★

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Kong has stolen Mario's girlfriend and taken her to the top of his steel fortress. You must guide Mario first across the Easy Elevator and over the rust and pies onto the fortress. Up the ladders to your loved one however be careful not to be killed in the process by the barrels which Kong hurls down the structure. Includes some of the best graphics ever seen on the VIC 20

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Plan ahead, and find out if you were right

Make sense of figures with two practical programs for the Spectrum from Dave Judson

It's obvious that sales of raincoats drop in fine weather and that sales of software rise as more home computers are sold

The technique of measuring the effect of one on the other is called correlation

And the advantage of knowing the strength of the relationships is that you are better able to make plans and predictions.

Program 1 for the Spectrum, Coefficient of Ranked Correlation, compares predicted results with what actually happens

Correlation is measured between -1 and +1 with, for instance, +0.8 indicating a strong positive correlation while -0.3 would show only a weak negative correlation.

Ranked information is familiar to us all. Top 20 records, Miss World placings or 1-2-3 result in a horse race

People in business might see a ranked list of products

Here's an example a range of rust preventatives for cars is recommended to you in this order, best first:

Antirot	1st
Beatrot	2nd
Counterrot	3rd
Deadrot	4th
Eatrot	5th

Test rankings on your company's fleet however indicate

Counterrot	1
Beatrot	2
Antirot	3
Eatrot	4
Deadrot	5

Question do you trust the experts who made the preliminary recommendation?

Using the program you will find the coefficient of rank correlation is +0.5, which indicates only a weak positive correlation between the advice given and your practical experience

Why not measure your forecasts of the Grand National result against the actual placings? If you don't get a strong negative correlation, well done

Program 1

```
   8 REM D JUDSON 1983
  10 REM coefficient of rank cor
relation
  20 PRINT "Where information is
 expressed"
  25 PRINT "in ranked or ordered
 form"
  30 PRINT "This program aids yo
u in"
  35 PRINT "comparing actual res
ults"
  40 PRINT "with those forecast"
  42 PAUSE 150
  45 CLEAR
  50 LET t=0
  60 INPUT "How many categories
are there? ",n
  70 IF n<=1 THEN GO TO 60
  80 DIM c$(n,10): DIM e(n): DIM
 a(n)
  90 FOR i=1 TO n
 100 LET d=0
 110 INPUT "Enter category title
",c$(i)
 120 INPUT "Enter the forecast r
anking",e(i)
 130 INPUT "Enter the actual ran
king",a(i)
 140 LET d=a(i)-e(i)
 150 LET t=t+(d*d)
 160 NEXT i
 170 LET r=1-((6*t)/(n*(n↑2-1)))
 180 LET r2=INT (r*10)/10
 190 PRINT "   TITLE      EXPECTE
D     ACTUAL"
 200 PRINT "                 RANK
         RANK"
 210 FOR i=1 TO n
 220 PRINT c$(i),"          ";e(i)
,"    ",a(i)
 230 NEXT i
 240 PRINT "COEFFICIENT OF RANK
CORRELATION IS -. ",r2
 250 REM interpretation
 260 IF r2>0.7 THEN PRINT "indic
ating a strong positive correlat
ion"
 270 IF r2<=0.7 AND r2>=0.1 THEN
 PRINT "indicating only a weak p
ositive correlation"
 280 IF r2<-0.7 THEN PRINT "indi
cating a strong negative correla
tion"
 290 IF r2>=-0.7 AND r2<=-0.1 TH
EN PRINT "indicating only a weak
 negative correlation"
 300 INPUT "ENTER 'Q' TO QUIT PRO
GRAM ANY OTHER KEY TO CONTINUE",
q$
 310 IF q$="q" OR q$="Q" THEN GO
 TO 330
 320 CLS : GO TO 10
 330 STOP
```

Variables

t accumulated variations squared
n the number of categories of data
c$ category title
e expected rank or position
a actual rank or position
d difference between actual and forecast rank
r r2 coefficient of ranked correlation

Program 2 calculates what is called Pearson's Coefficient, measuring the correlation — with the same range of results — between two variable sets of data

It could, for example, be used like this.

Comparison of expenditure on advertising with sales

period	advertising expenditure £100s	sales (units) 000s
1	20	70
2	30	100
3	30	110
4	40	120

gives +0.944, a strong positive correlation

Comparison of ice cream sales with rainfall

period	ice cream sales £	rainfall inches
1	200	1.5
2	200	1.4
3	300	1.2
4	400	0.8
5	400	0.6

gives 0.969, a strong negative correlation

program 1

How it works

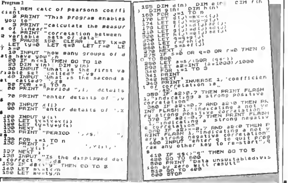
60 set up number of categories (say the top 10 records or first five in a race)
90-160 input data, square the difference between actual and forecast ranking and accumulate sum of the squares
170 and 180 calculate the coefficient of rank correlation rounded to one decimal place
190-240 print out your original data and the coefficient of rank correlation
260-290 set out a suggested interpretation

program 2

How it works

10 set counter for data collection loop which follows at line 50
30-40 enter titles of the two sets of data to be compared
50-130 collect raw data, period by period, accumulate total for later calculation of an arithmetic mean
133-139 print on screen the data collected for examination before any calculations are done. Give option of re-start
160-290 all the number crunching
340-390 suggest an interpretation of the results

Program 2



```
   1 REM calc of pearsons coeffi
ciant
   2 PRINT "This program enables
 you to"
   3 PRINT "calculate the measur
e of linear"
   4 PRINT "correlation between
2 variable  sets of data"
   5 PAUSE 150: CLEAR : LET tx=0
: LET ty=0: LET q=0: LET r=0: LE
T s=0
  10 INPUT "how many groups of d
ata have you",n
  20 IF n<=1 THEN GO TO 10
  23 DIM x(n): DIM y(n)
  30 INPUT "What is the first va
riable set called? ",v$
  40 INPUT "What is the second s
et called? ",z$
  50 FOR i=1 TO n
  60 PRINT "period ",i," details
"
  70 PRINT "enter details of ",v
$
  80 INPUT x(i)
  90 PRINT "enter details of ",z
$
 100 INPUT y(i)
 110 LET tx=tx+x(i)
 120 LET ty=ty+y(i)
 130 NEXT i
 133 PRINT "PERIOD ",v$,"     ",
z$
 135 FOR i=1 TO n
 136 PRINT i,"           ",x(i),"
     ",y(i)
 137 NEXT i
 138 INPUT "Is the displayed dat
a correct ? ",d$
 139 IF d$<>"y" THEN GO TO 5
 140 LET mx=tx/n
 150 LET my=ty/n
 155 DIM d(n): DIM e(n): DIM f(n
): DIM g(n): DIM h(n)
 160 FOR j=1 TO n
 170 LET d(j)=mx-x(j)
 174 LET e(j)=my-y(j)
 179 LET f(j)=d(j)*e(j)
 210 LET g(j)=d(j)*d(j)
 220 LET h(j)=e(j)*e(j)
 230 LET q=q+g(j)
 240 LET r=r+h(j)
 260 LET s=s+f(j)
 270 NEXT j
 275 IF s=0 OR q=0 OR r=0 THEN G
O TO 500
 280 LET a=s/(SQR (q*r))
 290 LET a2=INT (a*1000)/1000
 340 FOR i=1 TO 3
 341 PRINT
 342 NEXT i
 343 PRINT INVERSE 1,"coefficien
t of correlation is "
",a2,"
 350 IF a2>0.7 THEN PRINT FLASH
1,"indicating a strong positive
correlation"
 360 IF a2<=0.7 AND a2>0 THEN PR
INT FLASH 1,"indicating a not ve
ry strong positive correlation"
 370 IF a2<-0.7 THEN PRINT FLASH
 1,"indicating a strong negativ
e correlation"
 380 IF a2>=-0.7 AND a2<0 THEN P
RINT FLASH 1,"indicating a not v
ery strong negative correlation"
 400 INPUT "enter q to quit prog
ram any other key to re-start",q
$
 410 IF q$<>"q" THEN GO TO 5
 420 GO TO 600
 500 PRINT "Data unsuitabledivis
ion by zero will result"
 510 GO TO 400
 600 STOP
```

Mr. Chip

SOFTWARE

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Can you [illegible] at adventuring with this [illegible] fantasy. Not for the faint of heart or the slow of sword!
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The Adventure Series programs are available on tape for the following systems: Commodore VIC 20 (not available for White Barrows), Commodore PET, Sharp MZ-80K and MZ-80A, Tandy TRS-80 Model I, BBC Model B or 32K Model A, Atari 400 and 800, Sinclair ZX Spectrum.

ASP Software, ASP Ltd,
145 Charing Cross Road, London WC2H 0EE

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You're the only one who can save our planet

It's up to you now, so climb into your tank and tackle the alien invaders in Vince Apps' program for the standard TI-99/4A

Well, it had to happen. All those alien invaders finally took over the Earth, in spite of a spirited defence on computers throughout the land

Having grown fat (and red) on a diet of human blood they've now retired to their strongly defended base somewhere in England's green and pleasant countryside, leaving you with only a single tank to your name

My program, which runs in 16K on the standard TI-99/4A, is called Last Stand and simulates the final battle

Move with the arrow keys (E S D X), with the alpha-lock button down Fire with the space bar

Your task, in the unlikely event of your survival, is to destroy the alien headquarters at the top of the screen

Luckily the aliens are pretty dumb and you will be able to hide behind trees and shoot from under cover, until, that is, you run out of trees

```
100 REM
110 REM  LAST STANO
120 REM
130 REM  BY VINCE APPS
140 REM
150 GOTO 1040
160 REM  MOVE TANK SUBROUTINE
170 CALL KEY(0,K,S)
180 IF K<>32 THEN 600
190 REM  FIRE SHELL
200 ON D GOTO 210,230,250,270
210 R=-1
220 GOTO 440
```

```
230 R=1
240 GOTO 440
250 C=-1
260 GOTO 280
270 C=1
280 FOR J=CL TO CL+C*5 STEP C
290 IF (J>31)+(J<2)THEN 420
300 CALL GCHAR(RW,J,X)
310 CALL HCHAR(RW,J,140)
320 CALL SOUND(100,900,4)
330 CALL HCHAR(RW,J,X)
340 IF (X=128)+(X=129)THEN 1660
350 IF X<>130 THEN 420
360 CALL SOUND(350,-5,2)
370 CALL SCREEN(7)
380 GOSUB 1550
390 CALL SCREEN(4)
400 CALL HCHAR(RW,J,32)
410 GOTO 800
420 NEXT J
430 GOTO 800
440 FOR J=RW TO RW+R*5 STEP R
450 IF (J>23)+(J<1)THEN 580
460 CALL GCHAR(J,CL,X)
470 CALL HCHAR(J,CL,140)
480 CALL SOUND(100,900,4)
490 CALL HCHAR(J,CL,X)
500 IF (X=128)+(X=129)THEN 1660
510 IF X<>130 THEN 580
520 CALL SOUND(350,-5,2)
530 CALL SCREEN(7)
540 GOSUB 1550
550 CALL SCREEN(4)
560 CALL NCHAR(J,CL,32)
570 GOTO 800
```

```
580 NEXT J
590 GOTO 800
600 OCL=CL
610 ORW=RW
620 IF (K<>69)+(RW<3)THEN 650
630 D=1
640 RW=RW-1
650 IF (K<>88)+(RW>22)THEN 680
660 D=2
670 RW=RW+1
680 IF (K<>83)+(CL<3)THEN 710
690 D=3
```

How it works

160-800 move tank subroutine
170 look at keyboard
200-580 fire shell
600-610 store row and column positions
620-730 select direction and new position
750-790 draw tank
820-1020 move alien subroutine
830-860 generate new alien
870-880 store row and column positions
890-960 select new position
970-1010 print alien
1040 start of main program
1130-1270 define characters and colours
1290-1370 initial values
1390-1400 print screen at start
1500-1530 main subroutine calling loop
1550-1560 delay subroutine
1590-1630 destroyed by alien
1660-1760 HQ hit

Hints on conversion

Texas Basic has some unusual commands for graphics and sound

CALL CHAR (number, hexadecimal string) controls the user definition of characters Number refers to the ASCII code of the re-defined character.

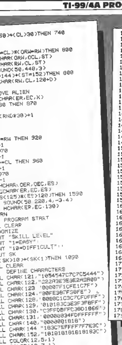
CALL HCHAR (row, column, number) prints the character whose ASCII code is number at position row, column on the screen The TI99/4A has a screen size of 24 rows by 32 columns

CALL GCHAR (row, column, variable) is the equivalent of **PEEK** The ASCII code of the character at position row, column on the screen is left in the designated variable

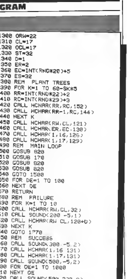
CALL SOUND (d, f, v) sounds a note of frequency f, duration d milli-seconds and volume v

CALL KEY (D, K, S), the equivalent of INKEY$, will leave the ASCII code of the key pressed in the variable K

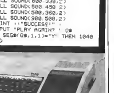
CALL CLEAR clears the screen. A direct equivalent of CLS.



```
700 CL=CL-1
710 IF (K<>68)+(CL>30)THEN 740
720 D=4
730 CL=CL+1
740 IF (OCL=CL)*(ORW=RW)THEN 800
750 CALL HCHAR(ORW,OCL,ST)
760 CALL GCHAR(RW,CL,ST)
770 CALL SOUND(50,440,3)
780 IF (ST=144)+(ST=152)THEN 800
790 CALL HCHAR(RW,CL,120+D)
800 RETURN
810 REM  MOVE ALIEN
820 CALL GCHAR(ER,EC,X)
830 IF X=130 THEN 870
840 ER=2
850 EC=INT(RND*30)+1
860 ES=32
870 OER=ER
880 OEC=EC
890 IF ER>=RW THEN 920
900 ER=ER+1
910 GOTO 970
920 ER=ER-1
930 IF EC>=CL THEN 960
940 EC=EC+1
950 GOTO 970
960 EC=EC-1
970 CALL HCHAR(OER,OEC,ES)
980 CALL GCHAR(ER,EC,ES)
990 IF (ES<125)*(ES>120)THEN 1590
1000 CALL SOUND(50 220,4,-3.4)
1010 CALL HCHAR(ER,EC.130)
1020 RETURN
1030 REM  PROGRAM START
1040 CALL CLEAR
1050 RANDOMIZE
1060 PRINT "SKILL LE<EL"
1070 PRINT "1=EASY"
1080 PRINT "10=DIFFICULT"::
1090 INPUT SK
1100 IF (SK>10)+(SK<1)THEN 1090
1110 CALL CLEAR
1120 REM  DEFINE CHARACTERS
1130 CALL CHAR(121,"1054547C7C7C5444")
1140 CALL CHAR(122,"222A3E3E3E2A2A00")
1150 CALL CHAR(123 "00007F1CFE1C7F")
1160 CALL CHAR(124."00FE307F30FE")
1170 CALL CHAR(128,"8080C1C3C7CFDFFF")
1180 CALL CHAR(129,"010183C3E3F3F8FF")
1190 CALL CHAR(130,"C3FFDBFFC38D1066")
1200 CALL CHAR(131,"00000034FDFFFFFF")
1210 CALL CHAR(140,"0000001818")
1220 CALL CHAR(144 "183C7EFFFF7F7E3C")
1230 CALL CHAR(152,"181818181818183C")
1240 CALL COLOR(12,5,1)
1250 CALL COLOR(13,7,1)
1260 CALL COLOR(15,13,1)
1270 CALL COLOR(16,11,1)
1280 REM  INITIAL VALUES
1290 RW=22
```



```
1300 ORW=22
1310 CL=17
1320 OCL=17
1330 ST=32
1340 D=1
1350 ER=2
1360 EC=INT(RND*20)+5
1370 ES=32
1380 REM  PLANT TREES
1390 FOR K=1 TO 60-SK*5
1400 RR=INT(RND*22)+2
1410 RC=INT(RND*29)+3
1420 CALL HCNAR(RR,RC,152)
1430 CALL HCHAR(RR-1,RC,144)
1440 NEXT K
1450 CALL HCHAR(RW,CL,121)
1460 CALL HCHAR(ER,EC.130)
1470 CALL HCHAR(1,16,126)
1480 CALL HCHAR(1,17,129)
1490 REM  MAIN LOOP
1500 GOSUB 820
1510 GOSUB 170
1520 GOSUB 820
1530 GOSUB 820
1540 GOTO 1500
1550 FOR DE=1 TO 100
1560 NEXT DE
1570 RETURN
1580 REM  FAILURE
1590 FOR K=1 TO 10
1600 CALL HCHAR(RW,CL,32)
1610 CALL SOUND(200 -5,1)
1620 CALL HCHAR(RW CL,120+D)
1630 NEXT K
1640 GOTO 1770
1650 REM  SUCCESS
1660 CALL SOUND(300 -5 2)
1670 CALL HCHAR(1,16 131)
1680 CALL HCHAR(1.17,131)
1690 CALL SOUND(500,-5,2)
1700 FOR DE=1 TO 1000
1710 NEXT DE
1720 CALL SOUND(500 330,2)
1730 CALL SOUND(500 450 2)
1740 CALL SOUND(500,360,2)
1750 CALL SOUND(900 500,2)
1760 PRINT ::"SUCCESS!" :
1770 INPUT "PLAY AGAIN? " Q$
1780 IF SEG$(Q$,1,1)="Y" THEN 1040
1790 END
```



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HCW-14

Salamander Software

Create multi-coloured effects and add more appeal to your programs. David Nowotnik shows you how to do it with both models of the Oric-1

The commands INK and PAPER, which set the global foreground and background colours on the Oric-1, can be used to create exciting effects.

PAPER sets all the attribute bytes in the left most column of the screen to the desired value, while INK adjusts all the bytes in column 0.

Colour changes can be made with INK and PAPER to an existing display to produce effects like this routine which will simulate an explosion when you add it to one of your own programs.

```
1000 INK0 PAPER7
     EXPLODE
1010 FORI = 1TO10 WAIT5
1020 INK7 PAPER0 WAIT5
1030 INK0 PAPER7 NEXT
```

INK and PAPER are useful commands when you want just two colours on the screen, but other techniques are needed to get more than two.

The ways to achieve this are using PRINT, PLOT, or POKE. PLOT is the easiest to use, but there are some restrictions to its use. Using PRINT to change colours is quite tricky, so I'll start with POKE.

This article deals with TEXT mode only. In this mode, the display file starts at address 48000 on the 48K Oric, and 15232 on the 16K machine. This address corresponds to the top left position on the screen, in the line normally reserved for system messages (e.g. Searching, and CAPS).

You can use that line by POKEing values onto the display file.

As an example, try the following routine (make sure you're in TEXT mode).

```
10 Z$="Hello"
20 FORI=1TO5
30 POKE48005+1,ASC(MID$
   (Z$,1,I))
40 NEXTI
```

In much the same way, you can POKE attribute characters onto the display file. The attribute codes are given in the Oric handbook, but for those who prefer to use decimal rather than hex, these codes are shown in table 1. Try this.

```
10 ATT=16
20 FORI=0TO27
30 POKE 48000+40*I,ATT
40 ATT=ATT+1 IF
   ATT>23THENATT=16
50 NEXT
```

You should see all the eight colours on the screen, as horizontal bars.

The routine POKEs the background colour attributes into the left most column of the screen display.

Now enter (as a direct command) PAPER 7, and your display turns white. The PAPER command has erased all the attributes POKEd in by the above routine, and replaced them with attribute 23. Try the routine again, changing line 30 as follows.

```
30 POKE 48020+40*I,ATT
```

This time you get bands of colour, but on the right hand side of the screen only. Enter PAPER 4, and the left hand side turns blue, but the colour bands are unaffected.

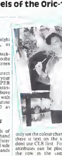
The new routine places a background colour attribute halfway across the screen in each row. The way Oric colour works is to move from left to right in each row. When a background colour attribute is encountered (usually in the first column), it defines the colour for the whole row, UNLESS another background colour attribute is encountered.

The background colour then changes at that point to the new colour. This is the colour for the remainder of the row, unless more attributes are encountered.

INK or foreground colours work in the same way. Modify the above routine by replacing lines 10, 30 and 40 with:

```
10 ATT=0
30 POKE 48001+40*I,ATT
40 ATT=ATT+1 IF
   ATT>7THENATT=0
```

This time the foreground attributes are placed in the second column (numbered 0). You will



only see the colour changes when there is text on the screen, so dont use CLS first. Foreground attributes can be placed along the row in the sameway as background attributes.

There are other attributes, for flash, standard characters, alternate characters, and double height. These attributes have values between 8 and 15. You may care to experiment with these.

The PLOT command is easier to use than POKE. For example PLOT7,5,20 places the attribute 20 (background blue) at screen position column 7, row 5. This means that the machine calculates the screen address for you. However PLOT will not work on the left-most screen column, and the top row. POKE must be used in these cases.

As an example of the use of PLOT, try the following as a direct command.

```
PAPER7 PLOT7,5,20 PLOT8,
5,"Hello" PLOT14,5,23
```

The routine places the message "Hello" on the screen. The attribute before the message changes the background colour of the message, the attribute after the message changes the background colour back to white.

The use of PRINT to change colour attributes is explained in the Oric handbook, but may not be very clear to beginners. Let's examine a one line example.

```
PRINT" "CHR$(27)"
T ABCD"
```

The 'escape' character (CHR$(27)) tells the computer that the next character to be printed is an attribute. In this case, the next character is a T, the code for background blue. As soon as the background attribute is printed, the 'escape' mode is automatically turned off, and the remaining characters in quotes are treated as normal text.

The space before the CHR$(27) is required, you get some strange effects without it — you may like to try it!

Attributes take up space on the screen, therefore a character and attribute cannot co-exist at the same screen position. To explain this, try:

```
PLOT 7,5,"Hello" PLOT9,
5,20
```

"Hello" is printed on the screen with the first PLOT. The second PLOT command immediately places an attribute (background blue) over the first l. The background colour changes at this point, but the l disappears, to be replaced by a blank space. All attributes in the display file appear as empty squares.

Colour changes in HIRES mode obey similar rules as in TEXT, except that a row is just one pixel deep. A row is eight pixels deep in TEXT. There are enough special features about HIRES to make that the subject of another article. So, watch this space, that article will appear in the near future. ■

Table 1—Colour attribute values

Colour	Fore ground	Back-ground
black	0	16
red	1	17
green	2	18
yellow	3	19
blue	4	20
magenta	5	21
cyan	6	22
white	7	23

Eyes down . . . for a look at the latest games

Ratings and run-downs from our review team on a selection of games for a selection of micros

Protector BBC B plus joystick £7.95

Quicksilva, 13 Palmerston Road, Southampton SO1 1LL

In this variation on an arcade classic, your task is to wield your laser to protect research units on an alien planet from monsters and mine laying UFOs

If you really get into trouble, you can give in and use the hyperspace function — and as the game progresses, your troubles increase

There's an imaginative scenario to the game on the cassette insert, and instructions for play are given on screen. Control is by joystick only — you can't use the keyboard

As well as making the best of the BBC's colour, graphics and sound Protector has that element of "just one more go" that will keep you playing it and maintain its popularity.

Well error-trapped and apparently bug-free, all in all a good, solid, enjoyable game. The only thing missing is a hall of fame feature — a pity, since it gives my children (and myself!) great satisfaction to see their names in lights **R.E.**

instructions	85%
playability	90%
graphics	82%
value for money	85%

★ ★ ★ ★

City
Defence
Shards
SOFTWARE

City Defence Dragon 32 £5.75

Shards Software, 10 Park Vale Court, Vine Way Brentwood, Essex CM14 4UR

This familiar arcade game is now being produced in many versions. Like Invaders, it must be the bread and butter of many software companies, otherwise they wouldn't produce these lookalikes. So how does this one compare?

A conventional interpretation in Mode 1 with few surprises. The familiar city is being bombarded by streamers and you have to destroy them with a laser guided by your joystick. A colourful display showing your city with some excellent explosive effects, and good accompanying sound

The movement of the cursor isn't particularly smooth, and took some time to get used to. Once you've started to zap the streamers, your score begins to mount upon screen. Annoyingly, though, you lose 100 points when you succeed in wiping out the required number of streamers and your city is restored

Bearing in mind the new wave of machine code games, this must be a poor, albeit cheaper than average version. You get what you pay for — not arcade standard but good of its kind. **M.P.**

instructions	100%
playability	80%
graphics	85%
value for money	80%

★ ★ ★

The Wizard BBC B £6.95

Quicksilva, 13 Palmerston Road, Southampton SO1 1LL

An interesting mutation of several arcade games, with an original theme, You take the role of Chzrnal the wizard, whose task is to save five maidens from the attentions of a host of demon-like birds

Chzrael stands on the edge of a small cliff, stage left, with the five ladies in a row in front of him, each perched on a rock. The birds descend from the top of the screen and attempt to carry them off

To stop them, the wizard must fire at them with his magic wand, which you can move up and down by using keys A and Z. As he kills off each attacking wave, the difficulty level increases

Colour, hi-res graphics and sound are used to the full, and what animation there is is superb

The cassette insert sets the scene in time honoured Quicksilva tradition, and playing instructions are supplied on screen. Despite my efforts, I found no bugs or accidental ways of crashing the program

The Wizard's strong graphics and simple concept give it instant addictive quality, and a hall of fame feature for the top three scores adds to the competitive element. But perhaps it is a little too simple to have lasting appeal — especially for arcade hardened addicts **R.E.**

instructions	80%
playability	70%
graphics	90%
value for money	75%

★ ★ ★

Fun and Games Dragon 32 £6.95

Shards Software, 10 Park Vale Court, Vine Way, Brentwood, Essex CM14 4UR

This is the best of the Shards programs I have seen — a bumper package with some novel ideas

Artist is a competition for up to four people. The computer asks for various inputs to create the parameters and then does the rest for you. It creates an abstract which is continually changing and which you stop when satisfied. The choice is then yours — either you or the computer must judge the 'paintings'. A nice routine where the computer deliberates and then chooses a winner

Gold is a joystick operated romp through minefields to collect the glittering ore. Circles is good fun as well: a memory game where you have to pair off coloured circles. A simple concept used effectively

Most unusual is Musical which allows the computer to control the cassette player for a game of musical chairs. A must for the childrens' party, complete with a list of names and eventual winner.

Other games are familiar enough and well presented. Noughts and Crosses challenged the younger children, while Brain provided the older ones with a good game of mastermind

Donkey is a terrific party game using a joystick and sound for pinning on the tail. Snap, Anagrams and Dice complete the offerings on this well-thought-out compendium

M.P.

instructions	95%
playability	95%
graphics	90%
value for money	90%

★ ★ ★ ★ ★

Family Programs Dragon 32 £6.95

Shards Software, 10 Park Vale Court Vine Way, Brentwood, Essex CM14 4UR

A compilation of eight programs designed to cater for a wide range of interests, but suffering a little from the "jack of all trades, master of none" syndrome Still, bearing in mind that the range is worthwhile in terms of providing a sample of what can be obtained, I shall deal with some of the highlights

Tunes is a race against the clock to recognise as many songs as you can The five song categories and over 100 tunes include nursery rhymes for the little 'uns and Golden Oldies for those with rather longer memories.

Finance offers a simple menu to either calculate mortgage repayment or savings It could be used to work out any form of loan, though — useful for calculating the annual rate on the credit card payments for your home computer?

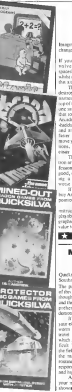
Quiz allows either one or two players to answer questions on a variety of randomly-chosen topics against the clock The two-player version is unnecessarily complicated by the use of joysticks to pick out the letters of the answer, but the first version is an enjoyable competition for all the family Both this game and Tunes require typing in PCLEAR prior to loading

Also included is a maths quiz, a version of Simon, a tank battle, a few Oddjob items and a game where you thread a simulated wire through a simulated ring

All in all, a nice collection which succeeded in interesting all members of the family, neatly packaged with loading details A good idea, in my view, to reinforce Dragon's own advertising stressing the family aspects of computing Could this be the end of the lonesome vigil beside the green screen? **M P**

instructions	95%
playability	85%
graphics	60%
value for money	85%

★ ★ ★ ★



Arcadia VIC-20 £5.50

Imagine, Masons Buildings, Exchange Street East, Liverpool

If you enjoy a game which involves destroying alien spaceships at breakneck speed whilst risking apoplexy, then give this a try

The aim is to heroically destroy the waves of invading nasties which descend from the top of the screen Do I hear someone say that space invaders does that too? Well that's true, but in Arcadia you have no protective shields, the aliens move randomly and are meaner and the pace is faster On the other hand, you move your space ship in all directions, which makes life slightly easier

The use of graphics animation are excellent and highly professional The use of sound was good, only occasionally resembling a partly blocked drain or worse

If you like arcade games, buy Arcadia, you won't be disappointed **A W**

instructions	70%
playability	80%
graphics	90%
value for money	100%

★ ★ ★ ★ ★

Schizoids Spectrum £5.50

Imagine Masons Buildings, Exchange Street East, Liverpool

I suppose that after Arcadia anything would be a letdown, and this certainly is Very high resolution graphics are all very well, but in black and white? On a Spectrum?

Basically you have to pilot your somewhat fragile space-bulldozer around the screen, avoiding the large spinning shapes which wander on from all directions In the centre of the screen is a Black Hole, looking rather like a Christmas Tree star having a fit

Once bulldozed into said hole the shapes disappear, but don't expect to score any points You don't score points at all in Schizoids — you simply exist The number of seconds for which you manage this feat becomes your score

Easy? Not at all Your bulldozer explodes if hit in the sides, and if hit head on at any great speed So the whole game can be reduced to just steering the craft around and staying out of trouble

R H

instructions	75%
playability	25%
graphics	50%
value for money	50%

★ ★

Mined-Out Drogan £4.95

Quicksilva, 13 Palmerston Road, Southampton SO1 1LL

The packaging and presentation of this game is very good A lot of thought has gone into the blurb and the instructions are very comprehensive There is even a demonstration game

It's an interesting idea where your objective is to rescue Bill the worm To get to him you have to travel through seven minefields which get progressively more difficult You guide yourself through the fields with the arrow keys and the machine code assisted subroutines assure you of a fast response with on screen scoring and high score record

A nice feature is the replay of your moves after a mistake thus showing you how you went wrong! In time you learn, like the proverbial rats in a maze, to respond correctly although further hazards present themselves to ensure that your job gets tougher

All this is achieved on the low resolution screens which, graphically, is not very exciting There seems to be a great disparity between the packaging and the visual product I must confess I was disappointed However, colour and sound are used dramatically and kept me interested

It was helpful not to have to restart at rock bottom each time Once on level three you had the option of restarting the level prior to your downfall **M P**

instructions	100%
playability	90%
graphics	60%
value for money	70%

★ ★ ★

NEW! NEW! NEW!

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Rainbow

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HCW 4

QUITE SIMPLY THE BEST

Why Micromega put programs on to a million TV sets

Micromega is the first home computer software company to advertise its games on TV. Candice Goodwin finds out why this company is spending thousands of pounds on commercials

If you are watching ITV or Channel 4 [illegible] commercials, the chances are you will have seen Micromega's [illegible] for its range of Spectrum games. If you did, you'll have [illegible] the [illegible] of the [illegible].

Though TV [illegible] video games are [illegible] Micromega is the first home computer software company to [illegible] its wares on television. [illegible] the first [illegible].

[illegible] advertising [illegible] a wider range [illegible] software [illegible]

computer fans, but [illegible] a wider commercial market [illegible].

It's no accident that Micromega's range of games are [illegible] like [illegible] blackjack [illegible] arcade [illegible]. The [illegible] family viewing [illegible].

As Micromega's sales manager Neil Hooper says: "We [illegible] that the whole family will see it [illegible], so I [illegible] playing that."

Micromega [illegible] games [illegible] software [illegible]

[illegible] the idea of selling [illegible] a machine code [illegible]

[illegible] Neil Hooper [illegible]

The result [illegible] was a [illegible] game compilation for the ZX81 [illegible] "That was really a bit of a

[illegible] commercial [illegible]" [illegible]

After [illegible] [illegible] Spectrum [illegible]

[illegible] company [illegible]

"The Spectrum [illegible]

[illegible] TV [illegible] Micromega's [illegible] TV [illegible]

Micromega [illegible]

As well as selling [illegible]

Neil Hooper

[illegible]

[illegible]

[illegible]

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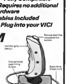
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Room for disc-ussion

In your recent review of our Graf series of programs, which appeared in issue No. 10, your reviewer has either got his facts wrong or has poorly conveyed the correct facts. It is stated that the picture can be saved to tape in about 20 seconds, which is quite correct, but that saving to disc is only about two seconds faster. In fact the save and load using disk takes about two seconds not 18 seconds. If the reviewer's disc is taking this long, I suggest that he has it checked.

The review states that the programs fail to exploit the full graphics capabilities of the BBC, without stating the facilities lacking. If providing all the available modes, colours and resolutions plus all the shapes, in outline or filled, mentioned in the review is failing to exploit the capabilies I would be interested to know just what is expected, bearing in mind that the programs have to be compatible with all operating system versions.

The review also bemoans the lack of a printer dump. While we agree this is a very useful facility to have we have also stated in the instructions that one is on the way, along with several other facilities. The upgrading will apply to both cassette and disc versions, with the cassette upgrades being provided on a separate cassette.

The reviewer complains that hitting the break key loses the program and picture when he tries to type OLD. There are several problems here. Firstly there is no way to disable the BREAK key, a problem that applies to everybody, not just CLARES. The cassette versions will re-run when BREAK is pressed, if they are being used on a computer without disc interface. If a disk interface is fitted, pressing BREAK results in the disc operating system corrupting sections of the program. This cannot be stopped, and the only solution would be to not use that section of memory, which would mean less features.

My last point is about the value for money rating. I cannot understand how Grafdisk can be awarded 85% but Grafkey only 40% when they are both basically the same program. The only real difference is that the disk version offers a SCREEN SAVE facility that is impractical on cassette. As Grafkey is £7.95 and Grafdisk £12.95 I find these figures bewildering. Okay, disc is nicer, but you are suppsed to be reviewing the program and not the medium. The majority of users will never have disc drives, and so a comparison between disc and cassette is of no real interest. To say that a program is better because it is on disc is rather elitist.

Dave Clare, Clares, Winsford, Cheshire

Into the Tomb . . . and others

I'd like to comment on the excellent reviews of VIC-20 games in a recent issue, as my family have devoted many hours to three of those games reviewed and can add to AW's impressions.

Although death may seem sudden and arbitrary in Pharoah's Tomb, there is only one way of succeeding — involving a combination of speed and sequence of actions. It is possible to solve the puzzle through guesswork and logical deduction, although the diminutive size of the objects encountered doesn't help.

There's no need to reload the game as, after each failure, the player is offered the option of trying again. There is a bug (usually triggered by approaching the spade from the wrong direction) from which the game never recovers, even in this case my children found that they could avoid the six minute reload time by keying STOP/RESTORE to clear the error and the RUN40 to bypass the reload sequence.

The main criticisms of the game must be the lack of a joystick option, as the use of the keyboard is slow and tiring and the fact that, once the puzzle has been solved, Pharoah's Tomb loses its appeal.

Starship Escape is as described and, should you reach some of the more distant chambers, you will find some unexpected and fascinating adversaries. Although it is possible to play the game for hours, making progress all the time, it is a great pity that there is no option to save the game for continuing another time.

Another criticism is the bug which crashes the computer whenever the option to restart from the beginning is taken. In this case there is no way of avoiding reloading.

In Krazy Kong it is possible to negotiate the elevator and to reach the fourth screen, because my children have done so several times although, like your reviewer, I can't do it.

AW missed the fact that in the first screen the "maiden" is a fella! However, he (she, it?) does change sex in subsequent screens.

One point which comes out of all these excellent games is that few games are sold without residual bugs. Is this because their producers do not bother to have them tested out by children, or is it due to the pressures of advertising games before they are completed?

Eric Finlayson, Macclesfield, Cheshire

Feet of clay?

Mr G A Bobker's letter on page 14 of HCW No. 11 restored my faith in human nature. Here was a rare phenomenon in the software jungle — a man who would not stoop to break the Trades Description Act by showing false pictures on cassette inserts.

To quote a passage from his letter, "This (his venture cassette) is unlike the majority of cassettes which are blatantly breaking the Trades Description Act. I for one am not prepared to splash space ships and rockets on a sleeve unless the game actually contains the graphics thus shown."

At last a man of upright stature and integrity — but wait... what is this I see on page 45 of the same issue of HCW? An advert for a program which enables the user, and I quote again, "to stop and copy any previously unstoppable Spectrum cassette." Guess who was offering this program for sale? That's right — Mr G A (Double Standards) Bobker of the same address.

B Robinson, Newcastle-under-Lyme, Staffs

Don't forget . . .

I am the pround owner of a 16K ZX81, from which I get much pleasure. However, the amount of software still being produced for this machine is falling.

I realise that the Spectrum offers far better programming opportunities, but what about the millions who still own ZX81s?

Anyway, congratulations on a first class magazine, and at least you still cater for **everyone**.

Paul Smith, Cheam, Surrey

. . . the ZX81

I enjoy reading your magazine and find it very good value for money at only 38p. One of the features I enjoy most is the software reviews.

Unfortunately I find that only one or two tapes are reviewed for the ZX81, while many more are reviewed for other computers like the Vic, Spectrum and Dragon.

I'd like to point out that the ZX81 has sold more in this country than any of the above-mentioned machines. More software reviews for the ZX81 please!

Russell Wooberry, Farnham, Surrey

We're right behind you on this, Russell, and that's why we're continuing to print ZX81 listings on a regular basis. The trouble is, our software reviews can only reflect the software that's on the market — and it's a sad fact that more and more companies are now concentrating on producing Spectrum programs. So come on software firms — don't forget the ZX81 users.

▶

Oric troubles aren't over

In your third issue you published a letter from me regarding my problems with Oric Products. The problems are still continuing!

I finally received an Oric on March 26, almost 24 weeks after ordering. Right from the start it failed to operate at all, and one of the keys was actually jammed down. You can imagine my anger and frustration after waiting for so long and then receiving a faulty computer.

However all was not lost. In the local paper I noticed that a nearby shop was advertising Orics for sale, so after sending back the one I had just received I dashed off to the shop, watched the demonstration tape, thought "this knocks the spots off the Spectrum" and parted with my hard-earned cash.

After a few sweaty, keyboard-pounding days I finally came to the conclusion that the Oric is not all it's cracked up to be. So on April 6 I put pen to paper — or, to be precise, finger to typewriter key — and dashed a letter off to Oric Products containing a whole list of questions I wanted, and still want, answering. As yet Oric hasn't even acknowledged my letter, let alone replied to it.

Since writing, I have started to experiment with the sound commands. Oh dear! It is impossible to have even a key click emitted from the computer without disturbing the screen display. No amount of tuning of computer or TV will cure this.

I consider that the Oric's specification contravenes the Trades Description Act, and unless my queries are cleared up I'll be claiming a refund under the Sale of Goods Act.

A.J. Lenton, Poole, Dorset

Pam Durkie, for Oric, said: "A useful tip for adjusting screen distortion is to fine tune, using adjusting screws underneath the Oric, while the computer is set to PAPER Red. But if Mr Lenton has no luck with this and his other problems, he should take his Oric back to the dealer and ask his advice. All Oric dealers have been issued with full instructions on how to sort out commonly-occurring problems. If all else fails, they will make sure the Oric is sent back to Oric Products and repaired."

We'll meet again

I was interested to read John Shiah's letter in HCW May 17-23, because I own both a Spectrum and an Oric. I use them both about equally, but I much prefer the Spectrum.

The Oric has some wonderful features, it's true, but getting them out of the machine is a real pain. And not only is the Oric now more expensive than the Spectrum, as Mr Shiah points out, but its peripherals are more expensive too.

In the same issue of HCW a news item suggested that Oric Products might take up the Tandy's four-colour printer as standard for the Oric. I have already invested in one of these machines, which works fine with the other computers (such as the Dragon, Spectrum, BBC etc), but becomes very unreliable when used with the Oric.

When listing I find characters which shouldn't be there, characters missed out and difficulties with paper feeding. The Sinclair printer has its faults too —but then at £70, who can complain?

My final point is the same as Mr Shiah's too, and concerns the ZX Users' Club. It was a grave loss to all the ex-members (myself included) when the club was closed, but never fear — we will all be able to meet again at the ZX Microfairs, because Interface will always be there (fanfare, cheers and great finale).

Peter Shaw, Stanwell, Middlesex

The reviewer strikes back

I've noticed in recent issues of HCW — see, for example, No 11 — letters from readers knocking what has been said in software reviews.

Some of the criticisms have come from people who already own a piece of software that's been reviewed, and some from indignant software companies, and I thought that as a reviewer I'd stick my oar in too.

Firstly I'd like to emphasise that we reviewers are not biased in any way for or against the software we review. We have no links with software companies. So we're not out to pick holes in anybody's product nor, on the other hand, to say something is good when it isn't.

Whether you agree with the content of a review or not, please try to accept it for what it is: the reactions of an ordinary computer owner and potential software buyer to a piece of unknown software placed in front of him or her.

Not everyone likes and dislikes the same things, and of course a review shouldn't be taken as the last word on any product.

All we are attempting to do as reviewers is give you some advance information and opinion on a piece of software, so that if you decide to pay your money for it, you don't get a nasty shock. And other readers' letters indicate (eg Simon Vincent's letter in HCWS No 12) that all too often the reality of a software product contrasts unfaourably with the manufacturer's hype.

In response to the argument that a game which initially seems unappealing will be fine after a lot of practice, I feel that games shouldn't be something you have to flog to death in order to get any pleasure from them. A good game must have long term appeal, sure, but that doesn't mean it shouldn't be appealing to start with.

Finally, I'd just like to say that anyone who thinks reviewing software is easy should try it themselves and see!

A.W., Waltham Abbey

Clubs...

Please can you give the Basildon Microcomputer Club a mention?

We held our first meeting on January 11, and were amazed at the response.

Mark Court, 101 Plumleys, Pitsea, Basildon, Essex

. . . clubs . . .

This is to advise you of the formation of the Iver Computer Society, the ICs.

The meetings will be bi-monthly on 2nd and 4th Thursdays, and anyone interested should write to me or phone Iver 654431.

John Haigh, 141 Leas Drive, Iver, Bucks SL0 9BP

... clubs

We should be obliged if you could publish details of a multi-user Home Computer Club we have just formed for the whole of South Avon district.

I will supply interested readers with further details.

Valerie Boyde-Shaw, Secretary, Byte Home Computer Club, 7 Riverway, Nailsea, Avon BS19 1HZ

If a thing's worth doing . . .

I do not normally feel moved to write to computer magazines but I feel I must respond to John Shiah's letter in HCW No 11.

With regard to the difficulty of programming the Oric, I feel that if you want to produce more elaborate sound than the horrendous beeps the Spectrum has to offer, then you really must be prepared to attempt something more exacting. In the same way, if you want to write arcade action games, you have to knuckle under and learn to program in machine code.

Secondly, any cassette recorder with a five-pin DIN socket will support the Oric's lead, which is far more reliable than a jack plug connection. I personally have found no difficulty with the Oric's high speed baud rate.

One final point — you get what you pay for.

C. Black, Glasgow

On your bike, Eugene

After reading with interest about "Eugene's driving ambition" (HCW No 11), I thought I'd let you know about our programmers' ambitions here at Artic.

We have a team of six full-time programmers between the ages of 14 and 16. None of them drive, but they have all been supplied with Raleigh Super Sport Racers at a total cost of £720.

However when they pass their tests, we will be supplying them with company Lotus Esprit Turbos — we believe in buying British, and anyway, they're faster than a puny little Ferrari 308 GTS.

At the moment Richard Turner, Artic's managing director, drives a British-built Aston Martin Lagonda. But technical manager Chris Thornton, the black sheep, is driving a Lamborghini Contach LP500S, which he is waiting to take to Germany to see if it really will do 180mph.

I'm another traitor — I drive an Audi Quattro imported by VAG.

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Michael Hunt, General Manager, Artic Computing, Hull

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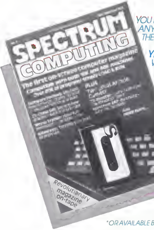

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